

**A Work Project, presented as part of the requirements for the Award of a Master Degree
in Management from the NOVA – School of Business and Economics.**

**HOW GOVERNMENTS CAN WORK WITH COMPANIES
TO CREATE POSITIVE SOCIAL IMPACT**

ALLANA CAVALCANTE COSTA PINTO | 30184

A Project carried out on the Master in Management Program, under the supervision of:

ILYA OKHMATOVSKIY

03 January 2019

HOW GOVERNMENTS CAN WORK WITH COMPANIES TO CREATE POSITIVE SOCIAL IMPACT

Abstract

The digital Era connected us and reset the way that we think to be more socially and environmentally responsible by sharing global concerns into local perspectives. The individual is overcoming the passive status of consumer/ citizen to take place into an active participant in the society's decision-making process. Businesses are no longer just profitable institutions, they play an active social-role in managing communities' issues. Thereupon, is time to governments play the key-role as mediators to manage partnerships into initiatives that leads to a sustainable future. Aiming to contextualize the modern relationship between governments and companies working to create positive impacts, this paper will bring the Smart City concept. The analyze consists in present its potential as a management strategy for governments and a competitive advantage for the companies in the incoming capitalism' Era of sustainable development.

Keywords:

Smart-City, Government-role, Business-partnership, Corporate-Social-Responsibility (CSR).

1. Introduction

The digital revolution is dramatically transforming the world in a very short time. The technology is changing the traditional methods and the individual's expectations, which in turn takes the business and governments into a big pressure to change the way they set their strategies and run their decisions and actions. The Internet of Things (IoT) created a global community of connected people, where social networks and digital devices engage government, businesses and civil society into common interests and the world's well-being concerns. Thereby, the challenge sums up to how fast and far to go to attend the society's needs through the digital transformation.

This new generation of citizens were born relying on the internet to do daily tasks such as where to go, what to buy, who to follow, etc. Consequently, the easy access to information empowered them with more awareness to demand and achieve goals, along with the effectiveness in joint forces for rights and causes. This has intensified their urge for an ethical behavior to lead the future, as well as, coming up with a mindset for more sustainable and socially responsible approaches addressed in modern society issues.

This way of thinking demands from business to acting through the Corporate Social Responsibility (CSR) and commit with the communities to create positive impacts. At the same time, the government is required to be more transparent and open to dialogues from citizens. Wherefore, the partnership between both has become more regular to reach effective social impacts. The Smart City projects is an example that illustrates the cooperation of those stakeholders combined with technological innovation to rethinking processes into an urban-local perspective.

Smart City is defined as an intelligent management of urban space by using intense technologies to optimize the city's resources in order to improve the quality of life and the urban's infrastructure for the citizens. These initiatives seek for a more sustainable urban development, where all the

forces work together to build the cities of the future by solving the current issues. The communication facility through the IoT is the key factor, as it easily connects the stakeholders to address a common issue. For instance, when citizens can fast report questions to municipal governments through digital platforms.

The main idea is to integrate digital and physical elements to improve services, mobility, security, energy use etc., through communication technologies like mobile apps. There are already several cities developing to be Smart Cities and turning this into a global trend, as the globalization phenomenon leads to acting locally as a global development strategy.

Through the CSR perspective, the Smart City projects share the same stakeholders: business, government, third sector and the civil society. Additionally, the same principals and objectives, makes it possible to analyze it as CSR strategy. The core idea is transforming business and government' operational models by setting new directions for the entire industries. This leads to the development of more opportunities that successfully add value to society.

2. The relationship between governments and corporations through the CSR

Historically, governments hold the political power to legislate the state as a supreme authority. However, this mindset has been changed by the Globalization, that overcame the national boundaries to prioritize the economic relationships. Consequently, leading the globalized economy to demand new forms of governance to deal with the political challenges (Albareda, Lozano, Tencati, Midttun & Perrini, 2008).

Those challenges, are addressed to the crisis in the welfare state (Midttun, 2005), which call the civil society to seek for new ways to act collectively to deal with the social demands that the state is not able to handle (*Appendix 1*). Hence, the public sector is affected by the needs of the advanced

societies that drive it to a transformation in the Models of State (Mendonza, X. 1996). According to Mendonza, since the late 20th century, the State has been shifted from the Welfare State Model to the Relational State Model. The Relational State comes up with a mentality of a co-responsibility through all the society's agents, emphasizing the bonds between the public and private sector, state and society, the private sector and society (*Appendix 2*). In order to work in partnership with others agents, the governments have been adopting the relational strategy, which allows them to be responsible for the development of partnership projects, for example, with companies and NGO.

The advanced societies' scenario drives the economic power to leverage the companies to a dominant role, whereas the state assumes a dependent role. Therefore, in this context, the CSR come to light as a useful framework for promote collaboration between the governments and businesses, as well as to understand how both can work together to create positive impacts in the civil society. This inclusion of governments in the CSR framework is described by Zadek (2001) as being a new stage identified as the third CSR generation, where the CSR development is a central issue to the governments' new protagonist-role performance. Moreover, through this framework is possible to link all the Relational-State' stakeholders: government, organizations and civil society.

Besides the conventional views of CSR, empirical-evidences reflecting different approaches between corporations and government in divergent national governance systems theorizes CSR-government relationships into five distinct configurations over the content and process of CSR initiatives (see the table in *Appendix 3*): (1) CSR as self-government, (2) CSR as facilitated by government, (3) CSR as partnership with government, (4) CSR as mandated by government, and (5) CSR as a form of government (Gond, Kang & Moon, 2011). In this analyze, the *CSR as self-government* represents the base to all the other relationships, as although it operates along with the

government, the business does discretionary contributions to society quite independently. Which means that in this mode, the CSR initiatives are defined and designed by corporations.

On second model, *as a facilitator* agent, the government indirectly shapes CSR initiatives regarded as valuable. The governments can facilitate CSR through (a) endorsement, for instance in forms of speeches to give their approval to business' contributions, or tax incentives for companies charitable giving, and also through (b) subsidizing businesses, for example, for volunteering in public employment or training policies. *The Partnership* configuration, allows the government to shape even further the CSR with companies or business associations, denoting between them a range of possible power balances. In addition, is always noticeable the blend of complementary resources, for instance, the governments often bring fiscal and regulatory capacity, while companies bring its networks, employees, and knowledge to deal in addressing problems (Gond at al., 2011).

The *CSR as mandated by government* is the statutory-legislation' disclosure to not only encourage but to demand the adoption of CSR policies by major companies. Some governments have been sustaining those regulations in a way of coercion and punishment, for instance, when is required for companies to report their social, environmental and ethical impacts in the society. At last, the *CSR as a form of government* happens when business initiatives do not complement the government's action indeed, but on another hand are a functional substitute for this action. This replacement can be identified as the outcome of the welfare state crisis, as companies have taken to self-regulation to cover the governments' responsibilities, ending up by also being in the command of the approach in the law (Gond at al., 2011).

Through all this contextual analysis of governments roles and its types of relationship with corporations, is also remarkable the relation of the CSR public policies' development taking into account some important aspects like culture and geography. Assuming the relevance of different

business' cultures across the world to design CSR public policies, Aaronson & Reeves (2002a) developed a research in order to verify the acceptance of government's role in promoting CSR in Europe and United States. In comparison, European companies showed to be more comfortable to work with the government to improve social conditions, as well as in a regulated environment than the American companies.

Beyond that, the governments are challenged to implement public policy that enabling the leadership and partnership-based innovation in order to maximize the CSR' benefits to ensure their systematic acceptance and practice among the business' community. Therefore, to encourage a greater sense of CSR is necessary clustering public administration with public policy initiatives, counting with fiscal measures, multi-sector partnerships, statutory compliance, and international competitiveness as a form to design and operates it on CSR (Albareda et al., 2008).

The governments' strategy in addressing CSR public policies relies on the use of soft tools, identified as a system of 'soft intervention' policies or 'soft regulation' (Joseph, 2003). In other words, the government has to use soft intervention forms to impose CSR public policies in order to leverage the companies' voluntary adoption. Given that, is possible to highlight four models for developing public policies: (1) Partnership, a strategy shared between sectors for meeting socio-employment challenges (2) Business in the community, application of soft intervention policies to encourage companies' engagement in governance challenges that affects the community, e.g. entrepreneurship and voluntary service (3) Sustainability and citizenship, a social agreement that emphasis on a strategy of sustainable development (4) Agora, the creation of discussion groups for the different social actors to achieve public consensus on CSR (Albareda, Ysa & Lozano, 2007).

In order to classify the CSR-public-policies' categories according to the government goals, Benbeniste et al. (2004) proposed three main goals: CSR public policies to promote (1)

formalization, (2) transparency, and to encourage (3) scrutiny. Besides the public policies, even if the government uses the CSR framework to bear the state's social responsibilities in order to reach its own goals, CSR, in general, appears as a consequence of global business activities, due to which business still have to be taken into greater account when the decision is about impacts on society. Not only because the corporations are seen as the ones that most caused impacts (social and environmental), but also because of their financial and network power to lead social changes.

Analyzing the CSR framework through the corporation's perspective, initially, it is identified as a reaction to the society's external pressure, leading to a common overview of the companies' CSR programs as being intentional to improve their reputation and consequently working as a base-resource to achieve competitive advantage in the market. But more than that, corporations should perceive the scaled results for its own business by leading social improvements (*Appendix 4*). For instance, 'a business needs a successful community, not only to create demand for its products, but also to provide critical public assets and a supportive environment' (Porter & Kramer, 2011). On the other hand, CSR-framework' links all the stakeholders into a "win-win" concept, inferring that the corporation's profitability and wealthy is also important to manage social impacts. As exemplified by Porter & Kramer (2011), it is a concern for the governments regarding the economic growth and also for the civil society as being source of jobs and wealth creation of opportunities.

According to this, Porter & Kramer (2011) suggested the principle of *Shared Value* as being the key drive for the 'next wave of innovation and productivity growth in the global economy', where the corporations should 'create economic value in a way that also creates value for society by addressing its needs and challenges'. The authors, highlight the Shared Value strategy as not being a social responsibility, philanthropy, or even sustainable strategy, but as a new way to achieve economic success. Because the societal needs in this concept is recognized not only by the

conventional economics needs, but more than that as a coefficient to define markets. Hence, by contributing to the societal needs, at the same time, it means a saving costs for the corporations in the end. Even though at first it seems a raised cost, like innovate in technologies, improve operating methods or increase the employee's benefits/ training, in the medium-term it will result in the boosting of their productivity and market's expansion.

In general terms, the CSR framework presents a broader strategic benefit for all the stakeholders, expanding the connections between economic value and societal progress. Where the possible strategic roles to be played by governments fits in the collaborative aspect between the different stakeholders involved, centered on its role as mediator, facilitator, or partner. In this sense, the CSR in public-private partnerships become the models of governance for a *conscious capitalism* (see Appendix 5), that pushes companies to act voluntary into the community (Albareda et al., 2008).

3. Smart City Projects

3.1 Smart City Organizations

In the last decade, the Smart City projects has created significant organizations that are focused in the regulation and development of smart urban initiatives. They provide assistance to develop and implement the projects by offering consulting' services, database and networking platforms to connect potential partners and innovative solutions. Besides the governments', businesses', and citizens' role, these organizations come up to the Smart City Strategy as another stakeholder that helps to link the others' demands into a single direction. They contribute to keep growing the Smart City concept over the cities by sharing through their client's portfolio (governments, business and institutions) the strategies and projects that have been succeed in different cities worldwide.

Furthermore, this stakeholder also helps to manage and measure the performance of the implemented-projects, as well as in the development of new ones through data collected from the urban indicators and citizens. These organizations also play as an outsource intelligence for government and business that usually neither have a workforce nor time to manage the projects.

Bringing to light some examples, in 2014, the **World Council on City Data (WCCD)** was the first International Organization for Standardization (ISO), ISO 37120, to measure the cities' performance. WCCD works as a global hub and leader to the innovative cities that are committed to being a Smart City. They hosting a network platform that disposes urban metrics provided from the open city data in order to promote a partnership between cities, international organizations, corporate partners and academia. In the *Open Data Portal*¹ the public can access a bunch of cities' data, presented through a set of 100 indicators of city' services and quality of life. The Global City Indicators Facility has been tested by more than 250 cities worldwide, enabling a comparison and ranking of different cities according to multiple categories like economy, environment, education, governance etc. Besides the creation of the ISO 37120 certification system, they are also responsible for the Global Cities Registry™ - where cities can certify as being a Smart City. Both regulation work through the WCCD Foundation Cities.

The **World Resources Institute (WRI) Ross Center** is an international non-profit organization that helps to develop sustainable cities' projects. Established in 2014 the Center has been assisting the governments in implementing public policies and projects in the urban areas, in order to make the cities more accessible, equitable, healthy and resilient for people, businesses and the environment. WRI Ross Center has offices in more than 50 cities across the world, which makes their team enable to easily connect and coordinate cities with partners to catalyze innovative solutions and also share the expertise in different sectors from several local projects.

Additionally, the **New Cities Foundation** is global nonprofit organization that has been also contributing to accelerating the cities' process in being a Smart City. Committed with the urban challenges, they explore the macro drivers and trends to strategically bring businesses into these cities' projects. For instance, they call “members” the companies, start-ups, academic and nonprofit institutions that join the initiatives to make the cities a better place to live. The members' list count with companies such as Google, Cisco, Toyota, universities as MIT and cities' local institutes. Responsible to annually perform the **NewCities Summit**, the Foundation is playing an important role by running in the event the **AppMyCity!** a contest created by them for reward the world's best urban app. The mobile apps proposals have to improve the urban experience and make the cities more sustainable places. The winner receives a prize of \$5.000 and has your app implemented.

Leading positive changes is also **CityMart**, an organization that sources intelligent solutions for global cities through its paid digital platform. By their insight of “every procurement is an opportunity”, they have been boosting up to 100 cities that already adopted their platform tools: the *BidSpark*^{TM2} and the *Opportunity Builder*^{TM3}. The first is a networking tool that enables cities to post projects that can reach thousands of vendors via the platform's database. It is a “multi-channel marketing workflow” to connect a diversity of relevant partners with solutions to fit the project's needs. The second, aims to guide the cities/ clients in design better its procurements projects to better target partners to invest and explore global solutions. The clients get access to data (market intelligence), assistance to engage the market and share expertise with other cities, as well as with the documentation process.

Those are some examples of organizations that are focused only in the Smart City' initiatives, working as consulting companies to connect mainly government and businesses resources to generate project's opportunities for cities. However, there are many others companies that are also

involved in this field, like **Arup** an independent firm of experts in different areas focused in urban development. Besides that, the organizations that are nonprofit, used to receive financial support from investors (academic and other nonprofit institutes), or/ and companies' sponsorship to keep performing its activities.

3.2 Smart City Initiatives

Smart City Initiative can be classified as all the innovative solutions aim to cut costs and upturn the quality of life for the urban citizens. By analyzing the Smart City' projects are possible to identify different types of initiatives and interactions between the stakeholders: (1) digital technology through websites, mobile applications and social media, (2) a physical experience in the urban space, or (3) the combination of both.

A plenty of digital initiatives work to connect governments and citizens through a collaborative communication channel, for instance, the **Public Stuff** ⁴ and the **SeeClickFix** ⁵ in the US, the **Colab** ⁶ in Brazil, **MyBurgh App** ⁷ in Pittsburgh and **Snap, Send Solve** ⁸ in New Zealand. In general, these digital platforms allow the citizen to report issues by sharing photos and location directly to the local government, as well as to receive updates as it gets fixed. Moreover, the users can receive city alerts about weather-related emergencies, road closures and events, or even search for city's services. As Smart City projects is about city-data acquisition, those platforms also allow the government to create polls to collect the citizen's preferences and opinions to help in manage better the govern decisions.

Besides the reporting-feature, there are others type of mobile apps developed to attend specific urban issues, for example, the **PetaBencana** ⁹ (previous named as PetaJakarta) a real-time disaster mapping service tool in Jakarta, Indonesia. The *PetaBencana.id* is an NGO created through a partnership between academy (MIT Urban Risk Lab) and government. The app works through a

*Twitter Data Grant*¹⁰, as a social media platform to share the flooding information, as the citizens struggle with real issues during the monsoon seasons. It also joined forces with Jakarta Emergency Management Agency, improving the time response to the disasters from the real-time snapshot of the flooding areas, enabling them to efficiently allocate the necessary resources to help citizens.

A digital platform that promotes a physical experience is the app **RingGo**¹¹ in the United Kingdom (www.myringgo.co.uk). Created to manage the parking issues across the UK cities, it works through sensors installed in car parks that are monitoring the occupancy in real time. Hence, the users are enabling to check the parking spots available according to the location that they are planning to go and even book the empty spots in advance. However, the major facility offered by the platform is the possibility of payment and renewal the parking timing through the mobile app, ceasing with the parking-machines. RingGo is an award-winner solution developed by the government in partnership with rail operators and private companies as Cobalt Telephone Technologies (CTT), the leader provider of prepaid mobile payments for on- and off-street parking.

The transportation sector is the most visible transformed. Besides mobile apps like the **9292**¹² in Amsterdam that helps to plan the best route, the **Google Maps** also provides real-time status of the city's public transports. Moreover, the carpooling and ridesharing apps like **BlaBlaCar** and **CommuteWise** are getting more popular, mainly **Uber**, that is now an international company. The alternative transport also has been growing fast and presents an opportunity for organizations to invest. For instance, the **CitiBikes**¹³ in New York, sponsored by the Citigroup (Citibank) in partnership with local authorities, is the largest bike share platform in the US. Furthermore, many cities across the world have already implemented it as a green-option for public transports, as well as to reduce the traffic and lift the citizens' healthy habits. Whence it also come up new electric alternatives like the company **eCooltra**¹⁴, in Europe, a scooter sharing platform where the users

just pay for the ride-minutes and can drop it off everywhere in the city. In the same line, there are the carsharing companies as **Emov**¹⁵ and **DriveNow**, with electric cars, in Lisbon.

In the race to become the future-city, some cities are taking lead, as their government is leveraging the support in the urban smart-projects to attract more private sector investments. Among them is Amsterdam, that has been intensively invested and even creating initiatives as the **Smart City Academy** to provide knowledge about smart city projects in order to help new project's development. The municipal government also builds a networking platform with organizations to facilitate them to join as partners in the developing city's projects. In this way, the government stimulates citizens to participate with good projects ideas or startups that can help the mobility, education, living or energy in the city. All the initiatives, workshops and forum's discussions are accessible through the city's digital platform: www.amsterdamsmartcity.com.

Barcelona is another leader in Smart City development. All over the city's innovative solutions, **the waste disposal and lighting systems** are examples of smart-initiatives that swift the urban infrastructure to be more eco-environment sustainable. The citizens deposit the residential waste in smart bins that use automated vacuum collection to suck the waste into an underground storage. By this, the trash-smell in the streets is avoided, and also enabling the city to detect the waste level across the neighborhoods and optimizes the garbage collection. Consequently, it decreases the resources and time required for this service, as well as helps in the incineration process, as later the waste is used to produce energy for heating systems. Moreover, the street lights across Barcelona is being replaced for LED-based lighting with a sensor network, in order to reduce the old-lamps' heat, providing more efficient energy and cost savings for the city. The government is purchasing those technologies from private companies like Philips, that helps the lights to communicate through a central-unit in the street, working also for the Wi-Fi, fiber-optic cabling to houses and

electric vehicle recharging stations. In addition, the sensors provide information about pollution, humidity, temperature, noise and enable to adjust lighting based on people's presence. Which produces environment' data that helps in the city's management and improvements.

Singapore ranks first in the Global City Performance Index 2017. Its Smart Nation's status comes from the city's constant evolution through smart innovations like the **Virtual Singapore**¹⁶. The smart-project is a dynamic 3D city model' and a collaborative data platform, that is part of the government's "Smart Nation" plan in development by Singapore's government and public agencies. When completed, it intended to attend not only the citizens, but the public, private and research sectors. The 3D digital platform will enable users to test-bedding concepts and services, helps in the city' planning and government decision-making process, as well as to solve emerging issues and complex challenges. By running the 3D simulation through the city's map and data available, will be possible, for example, figure out the highest buildings-roof surface to install solar panels and even calculate the expected-energy generate through that. Another initiative is the **Modern Aging Singapore**, a community platform which aims create new healthcare businesses to assist the elderly citizens. The program works to identify startups' companies that serve the aging population needs worldwide, and empower them to go further with their ideas in Singapore. The government has also rapidly implemented strategic national projects as the **SingPass** (the National Digital Identity portal), the **PayNow** (a platform to integrate and interoperate e-payments across the city) and the **Moments of Life** that forward the citizens' issues to the government.

Besides the projects to improve life in existing urban centers, there are also scaled projects to build an entire new Smart City. For instance, The Planet group, an Italian organization, started to build what promises to be the world's first social smart city, the **Smart City Laguna**¹⁷, in Brazil.

By social is it means a concept evolution of Smart City, as the idea is to combine the modern technology to affordable prices, for example, of houses and services.

Although its local action, the Smart City initiatives are shared globally in international conferences like the **Smart City Expo World Congress**, which enable other cities to get the knowledge to implement successful projects experienced worldwide. These initiatives have been becoming trends, as is it possible to observe different cities with same projects implemented, for example, regarding transportation, the most common one is the bike-share platform.

3.3 Philips Lighting Case

Philips, the Dutch multinational, has been successfully integrating the Smart City concept as part of the company's core strategy. The technological organization identified potential opportunities in the global market for its' lighting business with the smart lighting systems across cities. Focused on delivery value to its customers, the company have been investing in sustainable technologies as the LED luminaires controlled by CityTouch, Philips' light management platform.

CityTouch¹⁸ is a stringent security software that manages the connected public lighting for Smart City by a map-based system. From a centralized dashboard, the in-charge city' department has full visibility and a bunch of controlling options of the street's lights. For instance, is possible to adjust light levels on demand, securely monitor light points, set up schedules and easily identify when and where there is necessity of maintenance. The system data also provides near real-time insights about energy' use and cost, which helps to plan and manage the city's lightening more efficiently. This digital platform is integrated with **CityTouch Ready luminaires** – smart lighting solutions' products – but Philips also offer the software for existing city' luminaires by installing a node or connector kit, or through its certified partners too. **Los Angeles**, is a city leader in Philips CityTouch technology by remotely managing more than 100,000 street lights. The platform could

even improve the city' customer service, as the citizens don't need to call to report the lighting's outages like they traditionally used to do.

In addition, the **Szczecin**' municipal authorities, a **Polish**' city, has implemented Philips' lighting technologies under the program "Green Investment Scheme" (GIS) - SOWA "Energy efficient street lighting". By replacing the existing street lighting to a total-connected system, the city had a massive cost savings up to 70%. Another example is the **Nacka city in Sweden** that replaced its 70 W high-pressure sodium lamps for Philips' *TrueForce Road 35W LED lamps* and reduced almost half of energy consumption by also improving the quality of light and outdoor safety.

Besides the cities worldwide being turning over for this modern, eco-friendly and economical lighting system, Philips has been also engaged in other Smart City initiatives. For instance, the **Smart Cities Challenge by Philips Lighting** that rewards the startup which comes up with the best innovative ideas and solutions for improving cities. Moreover, the organization is constantly engaging in forums and sponsoring Smart City's researches like the **Empowering Cities Report** developed in partnership with The Economist Intelligence Unit (EIU).

Accordingly, Philips is not only selling lighting products but also handing over its technological expertise to help their customers to take more advantage of smart solutions. Therefore, more than creating value for its customers and making positive impacts, the company is at the same time capturing the value created. In other words, by addressing it into their business strategies, Philips is acquiring a sustainable competitive advantage over its competitors.

4. Smart City impacts & projects development

The relevance of the Smart City initiatives in the international context aims more than only makes citizens' life easier or improve the urban spaces with technology. According to the UN-

Habitat (United Nations Human Settlements Program) is occurring a phenomenal shift towards urbanization, where 6 out of every 10 people in the world expected to live in urban areas by 2030. The consequences of this accelerated process become an international concern as the lack of an effective urban planning can affects the world's sustainable development. Nowadays, many cities are already facing the *Domino effect* from a bad urban-management, these effects can be illustrated as for instance, the outdated infrastructure leads to increase the pollution and health issues. Likewise, the growth of slums by not having proper housing, that escalates poverty and unemployment, which consequently brings safety and crime's problems.

The global concern with the world's sustainable development is putting the urban settlements in the spotlight and calling the stakeholders to collaborate in this development as its being a societal need. The governments are acting through the CSR framework to integrate into the projects with companies and citizens, where the Smart City represents a global concept of a *Business Ecosystem* that provides a ground to develop and implement smart-initiatives to bear the modern society needs.

Is possible to analyze the Smart City through the conceptual framework of Business Ecosystems because it is about partnerships between multiple agents that contribute to different levels to turn up the smart-initiatives in the urban spaces. Adner (2017) defined Business Ecosystems as “The alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize” and also identified four elements of its structure: activities, actors, positions and links (*see Appendix 6*). This ecosystem' structure shapes the economic relationships nowadays, and become an opportunity for creating competitive advantage through the collaboration of a set of *actors* that share interests. The Smart City ecosystem is composed of several *actors* – government, corporations, citizens, NGO, academy etc. – playing less centralized and non-hierarchical *positions* as they are *linked* through partnership arrangements in order to offer

a portfolio of interrelated *activities* (products, services, policies) where multiple partners make relevant contributions to implement complex Smart-City-initiatives projects (*see Appendix 7*).

The Smart City ecosystem connect a range of industries according to the projects scope because its structure is built by markets with many independents firms that come from different types of competitive markets. As a Business Ecosystem, it provides protection to the firms through reducing the competitiveness with the strategic partnership agreements, for example, saving costs and loyalty programs. Consequently, it attracts new business to integrate in order to them also benefit from this developed-ecosystem and adding sharing-value with the other partners.

For instance, in order to contribute to positive impacts as a partner, the govern have been doing it in many ways, likewise purchasing the products from the companies as illustrated in Philips Lightning case. As well as, working in partnership with companies to implement those projects and even creating joint ventures companies. In addition, the government can support its partnership by addressing public tools such as (1) Informational tools (moral persuasion), through using the governs' communication channels to promote these collaborative initiatives, e.g. advertising new services, campaigns, trainings, websites. (2) Economic tools, representing the resources of the taxing authority and money that the government can invest, e.g. tax reduction, subsidies, awards, provide complementary assets and guarantees. (3) Legal tools, as being the state's legislative, executive and judicial powers to address the policy's changes, e.g. in laws, directives and regulations (Steurer, 2010).

On another hand, the Smart City movement across the world epitomizes the attempts to tackle the incoherence of urban design efforts to develop livable and sustainable cities. However, the currently reality of the Smart City are ordinary cities with a few or several smart projects implemented that makes their environment outstanding, but in truth, until now, there is no Smart

City in the world. Naturally, those efforts represent the Smart City potential to deliver its goals, but do not represent the networked end-to-end planning of an entire Smart City. Moreover, the theory does not convey the complexity and required resources to run Smart City initiatives. Such initiatives can take shape in diverse ways, and beyond that, there are entanglements that the public sector and private industries have to face to implement a single Smart City's project, which often drives numerous projects to failure because of lack of support or fight of divergent interests (Smith, Scientific American, 2017).

To illustrate that, *the Encircle case* represents a typical type of Smart City discourse as it takes place the partnership between industry, government, and university. The project started at University of Sydney as a university-led project that aimed the development of a digital information system prototypes for use inside transport environments such as bus stops and train stations. Likewise, many Smart City initiatives, it enfolded several processes and practices among organizations. First, in 2010, the researchers at the University of Technology Sydney and the University of Sydney developed the project proposal. In 2011, it granted an awarded. In the next year, the research commenced again, but in collaboration with more universities, like the University of New South Wales, as well as industry partners from two public transport governing organizations (Transport for NSW, Sydney Trains), a local council (the City of Sydney), an architecture consultancy (Grimshaw Architects), and engineering firm (ARUP) under the Australian Research Council grant scheme. The researches were based on the constraints of the sociotechnical system, and later many concept physical and visual prototypes were made. The following step was to propose the project to a range of stakeholders to get their approval and investment in resources for the development phase. However, only few of these concepts were approved or further developed, and in this case, the farthest implementation that the project could

reach was the development of a 1:1 scale prototype of a bus stop that utilized four digital interfaces. This bus stop was publicly exhibited on many occasions by the researchers and the other project's public-records are published on the project's blog: responsivetransport.org (Tompson, 2017).

Another strand, analyzes the Smart City as a rhetoric utopia between the urban visions and digital technology performing opportunities to governments and business, but not clarifying exactly what roles the ordinary citizens will play (Steven Poole, *The Guardian*, 2014). Because sociocultural changes have its particular dynamics, and sometimes the good promises that come at the first view end up to also bring unpredicted negative collateral-effects. As explained by the Prof. Rob Kitchin – one of the world's leading human geographers – besides the whole prospect of innovation, Smart City projects, appear as a “system of systems” and a “technocratic way of managing what goes on”, enabling to identify problems like privacy, consent, security, social division and technological maturity, as the key causes to the concept's current failure. In his point of view, Smart City's technology “does not address structural issues”, which means that is not through developing an app that the city's traffic issues will get solved, because in truth the way to bear the traffic is “get people out of their cars and onto public transport and bikes”.

Moreover, Prof. Kitchin criticism the lack of “democratic oversight” and “citizen involvement” in Smart City context and identifying it more as “a kind of civic paternalism” rather than initiatives with direct citizens participation. Where this critical examination is justified through the examples of organizations are appropriating over the technology correlated with smart cities, without citizen consent to get advantages like ‘anticipatory governance’, ‘predictive profiling’ and ‘dynamic pricing’. According to that, he pointed “We're data points. We've never been consulted and there is no notice of consent in these systems” and even raising some questions for reflection such as:

“Is the smart city primarily about creating new markets for profit? Or is it about improving quality of life for citizens?”.

The interest-conflicts between the Smart City stakeholders is also key for the initiative's success, mainly when it comes about a divergence of the government and business goals. The overlap of interests in this context is the intention, because with different objectives there is no partnership, as well as find out divergent-interests in some point of the project can lead it to failure. Another case from the city of Sydney, that is able to portray the stakeholders' interest-game behind the Smart City initiatives is the Real-Time App projects proposed in the mid-2000s by mobile app developers, PwC consultancy, transport service providers (Sydney Buses, Thalys, and Transdev); government agencies (Sydney Trains, NSW Roads and Maritime Services); and transport services management (Transport for NSW). This is a significant case because of the large amount of media coverage all over the years, although the public reports covered were limited by the media. For instance, the government media releases exclusively reported information that reflected positively on their actions, rarely mentioning the roles of other stakeholders in successful projects, not even providing processual details of how the involved-teams were developing services and systems. Whilst very public, this project never publicly shared its current activities with those that had been working inside and across the organizations initially involved, leaving loose ends regarding the knowledge sharing from the many prototypes' trials that had failed over the decades leading up to the final project version (Tompson, 2017).

One more aspect to take into consideration to address successful projects is be aware that good ideas not always mean a feasible business model. The understanding of the existing demanding for a service takes a based place in the project's planning, as well as if the customers (citizens) usage-process is clear to make them easily find (advertising/ full information) and adopt it. For example,

in Israel, the project Better Place promoted by the Israeli government in a joint venture between an American-Israeli entrepreneur, Renault and Nissan aimed to implement the use of electric cars. Integrating the “clean” energy category the first partners’ goal was to make the cars cheaper to consumers than gasoline-engine cars. The state assured tax incentives to purchasers at least until 2015, Renault offered a small number of electric models of existing vehicles at prices roughly comparable to gasoline models, and the batteries promised by the new American-Israeli company were expected to have a life of 7,000 charges (performing more than 150,000 miles). The new joint venture company started with a \$200 million investment, and through a business model that focus more on infrastructure rather than on car production, in 2008, they started to build facilities to recharge the cars and replace empty batteries quickly across the city. At the first view, the project’s planning was so aligned that looks like nothing could went wrong, even the Israel as the chosen place to test the idea sounded perfect to achieve the engagement success. However, the predictions initially made to the project – where they were expecting to 2009 a few thousand electric cars on Israel’s roads and 100K by the end of 2010 (with a gasoline-cars replacement tax of 10% a year) – wasn’t achieved, and low engagement of the citizens lead the Better Place filed for bankruptcy in 2013, with less than 1,500 electric cars sold and just 21 operational battery swap stations set up.

5. Conclusion

Have been a long time that the Smart City concept is approached as the ideology of the cities for the future. Regarding that, several perspectives about the smart-projects impacts in the society are taking the spotlight into global discussions for developing a sustainable future. This concept is getting more popular every day and attracting attention from new stakeholders interested not only to invest in smart-projects but also to predict its pros and cons impacts for the society. Likewise, the future’s uncertain, the Smart City concept is an open topic for discussions and testing

worldwide, as it is embracing a big broad idea in process of shaping new mindsets, public policies, business models and society's approaches. Overcoming the technological aspect, Smart City concept set up into being a strategy to lead the sustainable global urbanization process.

According to the *conscious capitalism model*, all businesses should be an opportunity for everyone to thrive and win, which whether applied to the Smart City concept, means that if it is managed effectively, there are opportunities to create value for each and every stakeholder involved. That's why this urbanization process should be perceived as potential growth opportunities not only for cities, but also for plenty of stakeholders, that can join the smart-initiatives with different purposes and goals, but in the end, making the social impact in the communities as the final intention to attain. This can also explain why Smart City concept can be a fertile ground for government and business develop a partnership to create positive impacts.

The concept can also be founded in the CSR framework, making possible to analyze smart-projects as CSR initiatives of companies and governments, not only because of the performed roles, but also for the societal-needs aspects taking in consideration for developing these types of project.

The Economist Intelligence Unit (EIU), supported by Philips Lighting, realized an investigation in how businesses and citizens in 12 diverse cities around the world envision this topic. The main results appoint to a desire from companies and citizens to engage the movement, but at the same time, they feel a lack of government support, access to digital platforms and information about the smart-projects. Half of the citizens interviewed believe that the expansion of free internet access in public spaces and more available information about the projects could encourage them to engage further. While just 32% of citizens are currently providing feedback to their local authorities, 51% of them showed interest in communicate with government through digital platforms. Moreover, younger people revealed to be more willing to contribute to the development of their cities,

explained by the behavior-trend of millennials being more service-oriented. Concerning to the companies, 73% of executives say that their company would be interested in sponsoring or participating in initiatives designed to improve city's infrastructure and services, while one in four executives feel that their company cannot effectively participate in urban improvements. In addition, 53% of businesses also think that smart cities can help to attract and retain top talent, which they believe has a bottom line impact in their business. However, 58% of the executives urge for more government activations to engage businesses in public decision-making when it is about improvements to urban spaces and services. As well as, 63% believe that the local authorities should invest more heavily in digital technologies that enable businesses to cooperate.

Hence, by analyzing the stakeholders' roles is possible to identify the governments as being the key player to leverage the Smart City development into an even more effective strategy to address society's issues. Governments have an opportunity and the responsibility to assume leadership in order to build bridges for business and civil society also join in this collaborative ecosystem for a sustainable future. The governs should be the bond that connects all the stakeholders, performing as the major partners in the smart-initiatives, because cities cannot smart-develop itself without its leaders being committed. Besides that, they also should adopt the Smart City approach as a development opportunity strategy, regarding its potential to solve several local-governments issues.

The companies' roles in performing inside the Smart City concept, should be unfolded into a Shared Value approach, as proposed by Porter & Kramer, where the corporations can create shared value opportunities through smart-projects because it can enable local cluster development. Furthermore, companies would be contributing to the community's development by providing its own business-expertise and still acting like profit-oriented business and not as charity donors doing philanthropy to the society. The collaboration in smart-projects can also align to a competitive

differentiation strategy for business rethinking its social business character. Consequently, leading its positioning to what their customers value most and so on implementing new operational models to take advantage of this differentiation. Moreover, the Smart City initiatives is also enabling the boost of new business/ start-ups that are centered to deal with these new specific urban's demands.

On another hand, the data sharing aspect presents as being the major concern to society's in terms of the smart city initiatives adoption, even though as a point to improve, because it interferes in the privacy and security of the individuals. Therefore, companies and governments must carefully address this topic during the project's development, centering it as a sensible requirement and implement a transparency culture with all the stakeholders in order to reach the project's success. Besides that, another unclear aspect inside the concept, concerns the role that the citizens would be performing in this stakeholders' arrangement context. There is an opportunity for government and companies bring the citizens as an active actor into the decision-making process of Smart City projects, shifting their passive engagement to a force that also shapes the market.

Finally, the Smart City can be perceived more as a political challenge to develop for the next years, than a technological concept to improve cities and make the citizen life's easier. Beyond that, it can also work as a capitalist-system' strategy to bear the future, as well as hold a potential to be a management strategy to be used by local governments to manage the city's growth. Although, the governments have to design a support-structure for it, for instance, create a department to advisory Smart City issues, nominating a team to control the privacy and security questions, another one for a risk/ compliance board, and even an IT emergency response team as it is dealing with digital systems that are able to crash anytime. In the end, all the Smart City concept sum up as being one more attempt of the modern society leading the urbans settlements through a sustainable development growth and finding solution for the current issues.

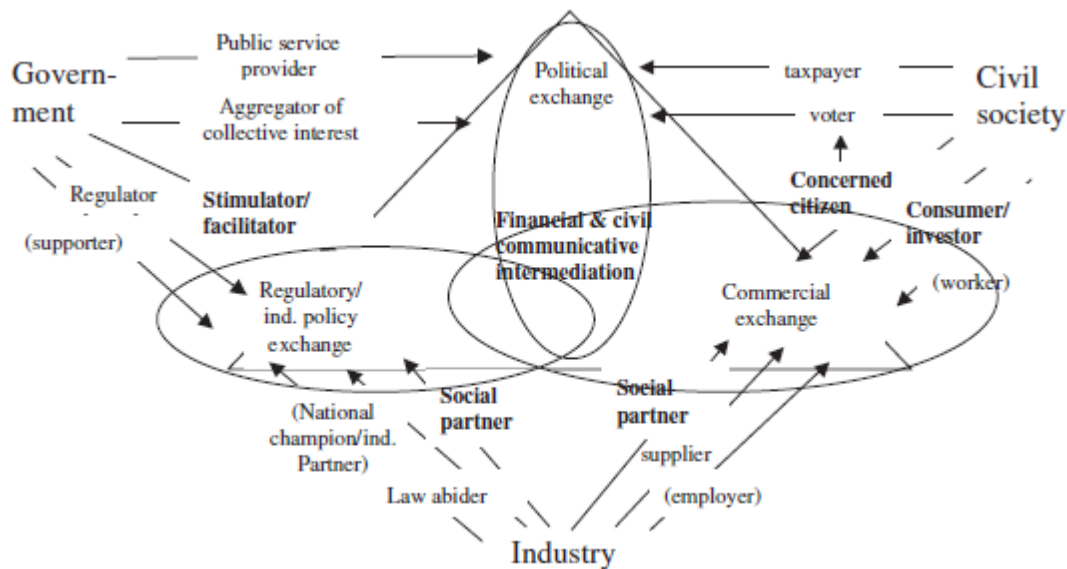
Appendix

Appendix 1. Table I. *The State Governance model evolution over the centuries.*

Governance model	Time period	Characteristics
Liberal	Nineteenth and early Twentieth Century	Market based, limited arms-length regulation, commercial exchange
Welfare state	1930s – late 1970s	Social responsibility, collective action, central role of government.
(Neo) – liberal	1980s – early 1990s	Market-based, de-regulation, competition, commercial exchange, minimal state intervention, individualism.
Institutional	1990s-	CSR, environmental responsibility, international policies, stakeholder participation

Source: Public Procurement International Cases and Commentary. Edition: First. Chapter: 10. Publisher: Routledge. (adapted from Midttun, 2005)

Appendix 2. Diagram I. *The Relational Model Players' Interaction.*



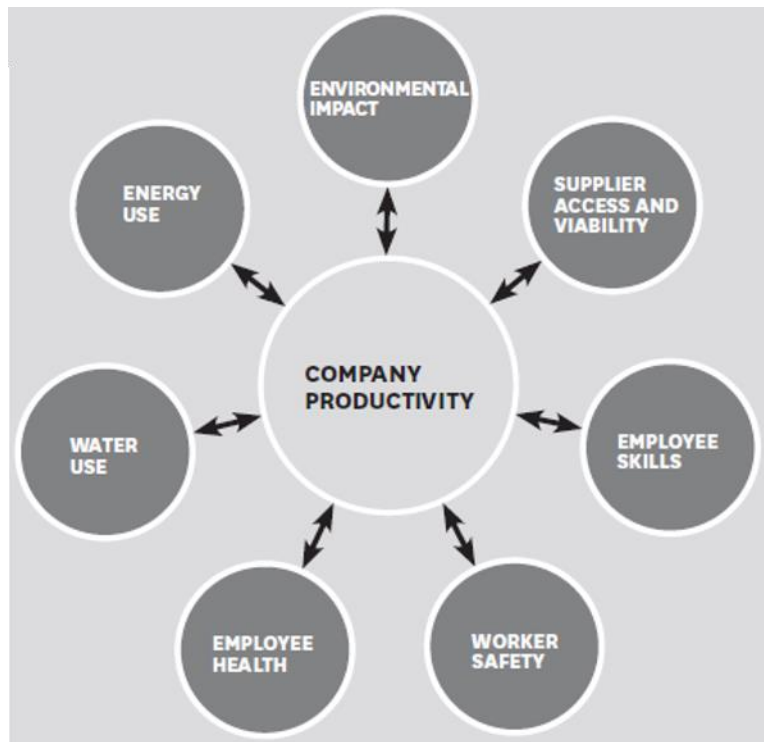
In the Relational State all the stakeholders interact with each other and naturally build partnership relations.
Source: Midttun (2005) in Albareda, et al. 2008.

Appendix 3. Table II. *Types of CSR-government relationships.*

Relationship type	Description	Mechanism of coordination	Influence of corporations	Influence of the legal framework	Illustrations
1. CSR as self-government	Corporate discretion independent of but alongside government	Absence of coordination, coincidence of private and public initiatives	<i>Strong</i> Little state interference in CSR initiatives	<i>Weak</i> Typical case of 'CSR beyond law'	Philanthropic contributions to society, strategic CSR
2. CSR as facilitated by government	Governments provide incentives for CSR or encourage CSR through rhetoric	<i>Ex ante</i> governmental influence through the design of incentive systems and <i>ex post</i> encouragement through rhetoric	<i>Strong – medium</i> Governments contribute to CSR but it is mainly driven by corporations	<i>Medium</i> CSR indirectly shaped by legal intervention Indirect form of 'CSR through law'	Governmental subsidies, tax expenditures, socially imprinatur; responsible public procurement
3. CSR as a partnership with government	Governments and business organizations (and often civil society) combine their resources and objectives	Various modes of coordination and interaction of government and business resources and strategies	<i>Strong – medium</i> State likely to influence weakly the content and strongly the process of CSR initiatives	<i>Medium</i> Indirect mobilization of the legal framework for shaping CSR	Multi-actor institutions to deliver social goods or norms/ codes using some governmental resources (as above)
4. CSR as mandated by government	Governments regulate for CSR	<i>Ex ante</i> governmental framing of CSR initiatives through the control of outcomes or disclosure	<i>Medium – weak</i> State likely to influence strongly the content of corporate CSR initiatives	<i>Strong</i> CSR shaped by the legal framework; direct form of 'CSR through law'	French law on social reporting (NRE); UK Companies Act amendment
5. CSR as a form of government	Firms act as if they were governments where there are government deficits	Firm level or through stakeholder processes/ institutions	<i>Strong</i> State power vacuum, delegation or substitution by CSR	<i>Weak</i> Corporations act as government 'CSR for law'	CSR in pre-welfare state; post-privatization; global governance; new/ 'wicked' issues

Source: Gond, Kang & Moon, 2011.

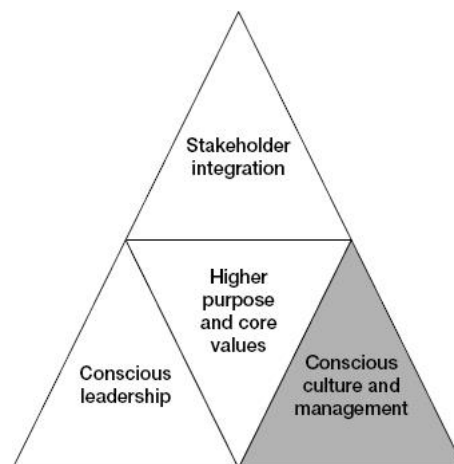
Appendix 4. Diagram II. *Addressing Societal issues to create competitive advantage.*



Examples of some areas where the connections between the social issues to a firm's business are stronger to be worked as a competitive advantage.

Source: Creating Shared Value (Porter, M. and Kramer, M. 2011)

Appendix 5. Diagram III. *Conscious Capitalism Piramide.*



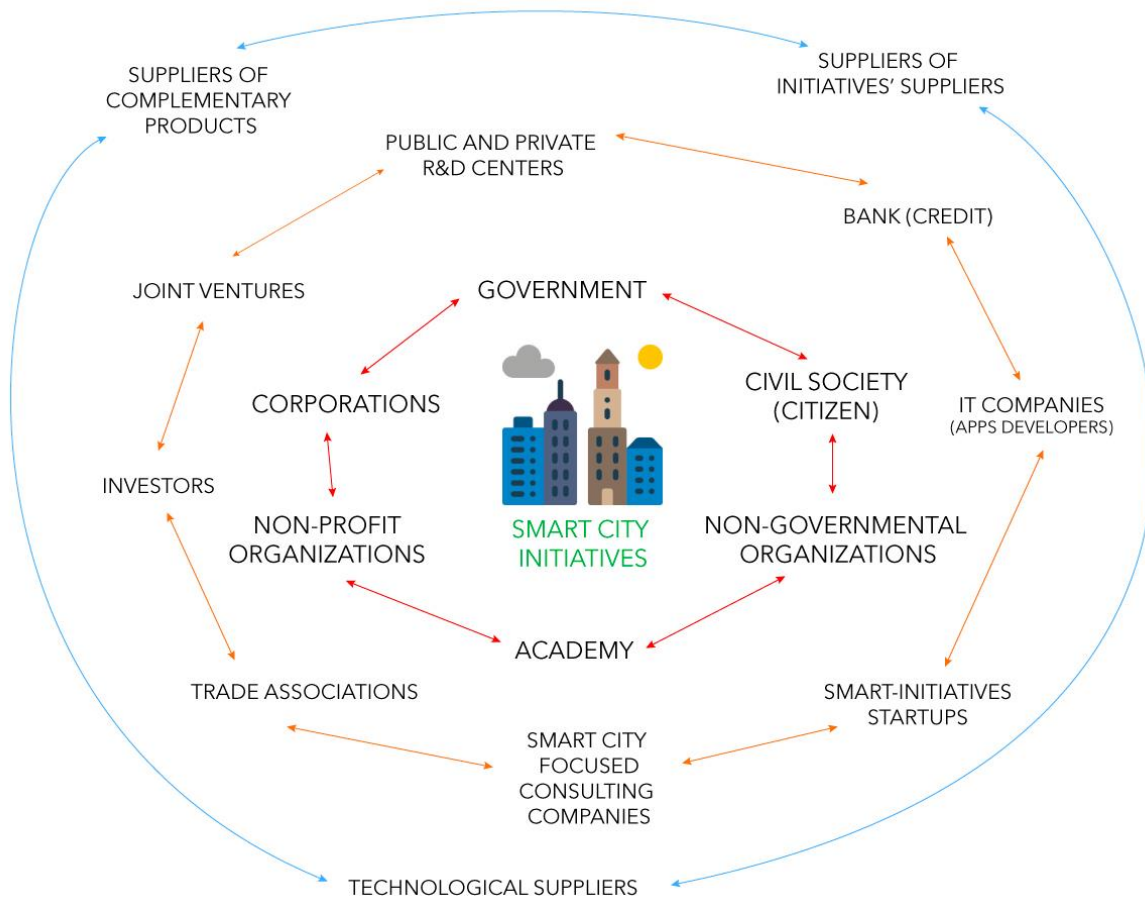
Source: Conscious Capitalism (www.oreilly.com)

Appendix 6. Table III. *Elements of a Business Ecosystem Structure.*

Elements of Ecosystem Structure	Ecosystem-as-Structure Perspective	Ecosystem-as-Affiliation Perspective
Activities	Discrete actions to be undertaken in order for the value proposition to be created	Not applicable
Actors	Entities that undertake activities	Entities that are tied to the focal actor
Positions	Specified locations in the flow of activities across the system	Derived from links to other actors
Links	Transfers across positions, which may or may not include the focal actor	Ties between the focal actor and other actors

Source: Ecosystem as Structure: An Actionable Construct for Strategy. (Adner, 2017)

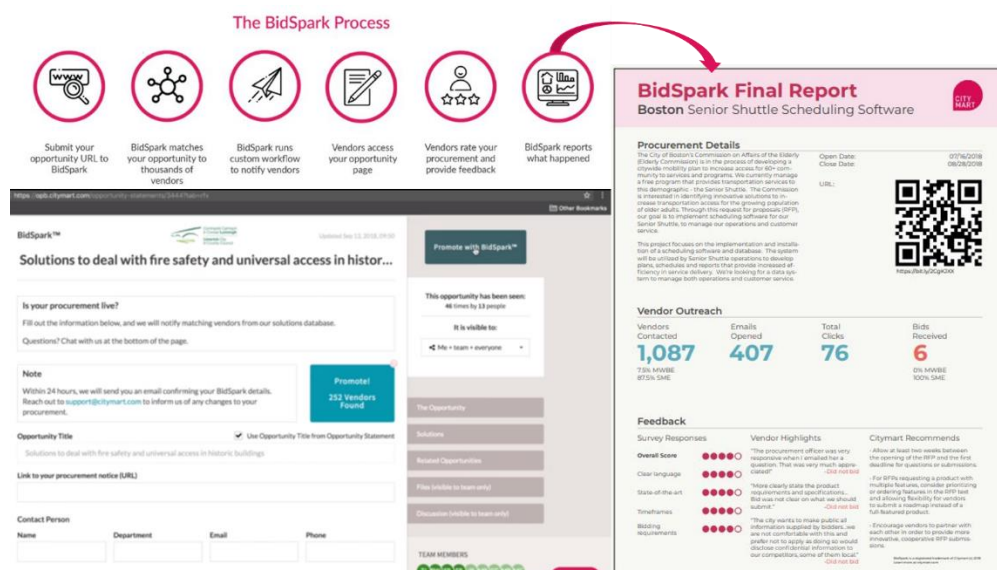
Appendix 7. Diagram IV. *Smart City as a Business Ecosystem Structure.*



Conceptual framework of the Smart City Ecosystem and its partnerships co-relations through stakeholders.

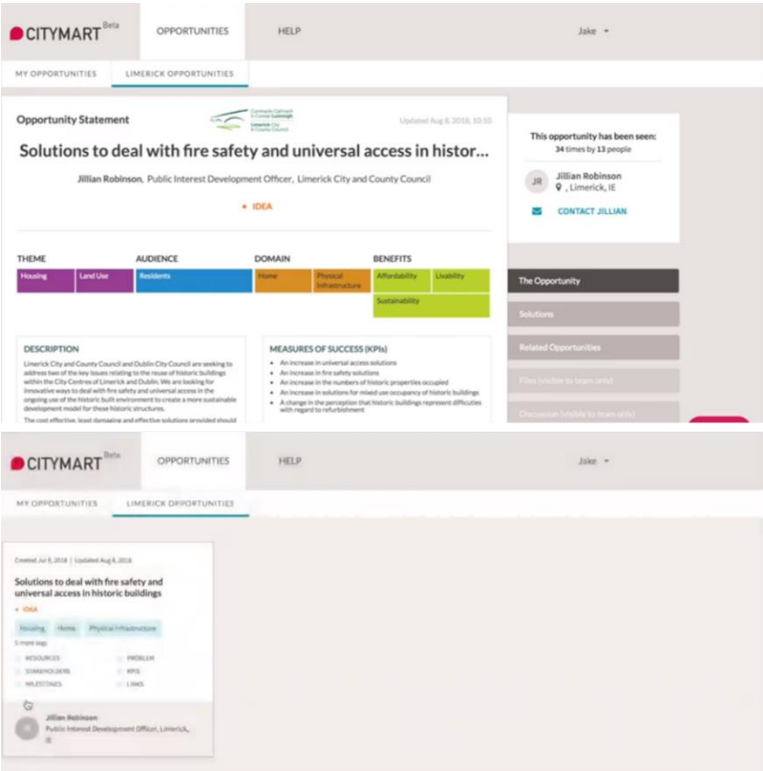
[illegible]

Figure 2. *Citymart platform: BidSpark™.*



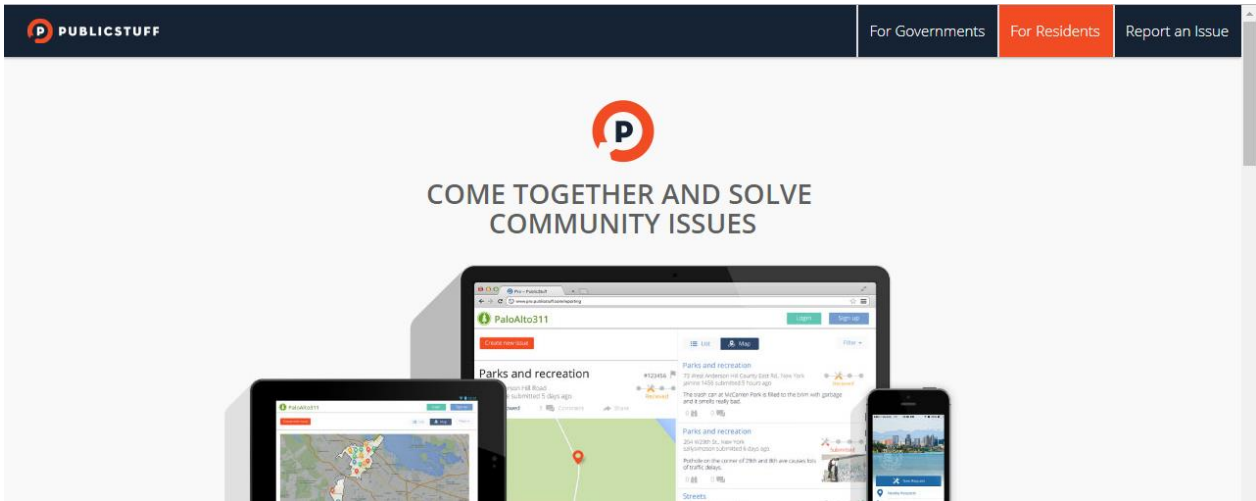
31

Figure 3. Citymart platform: Opportunity Builder™.



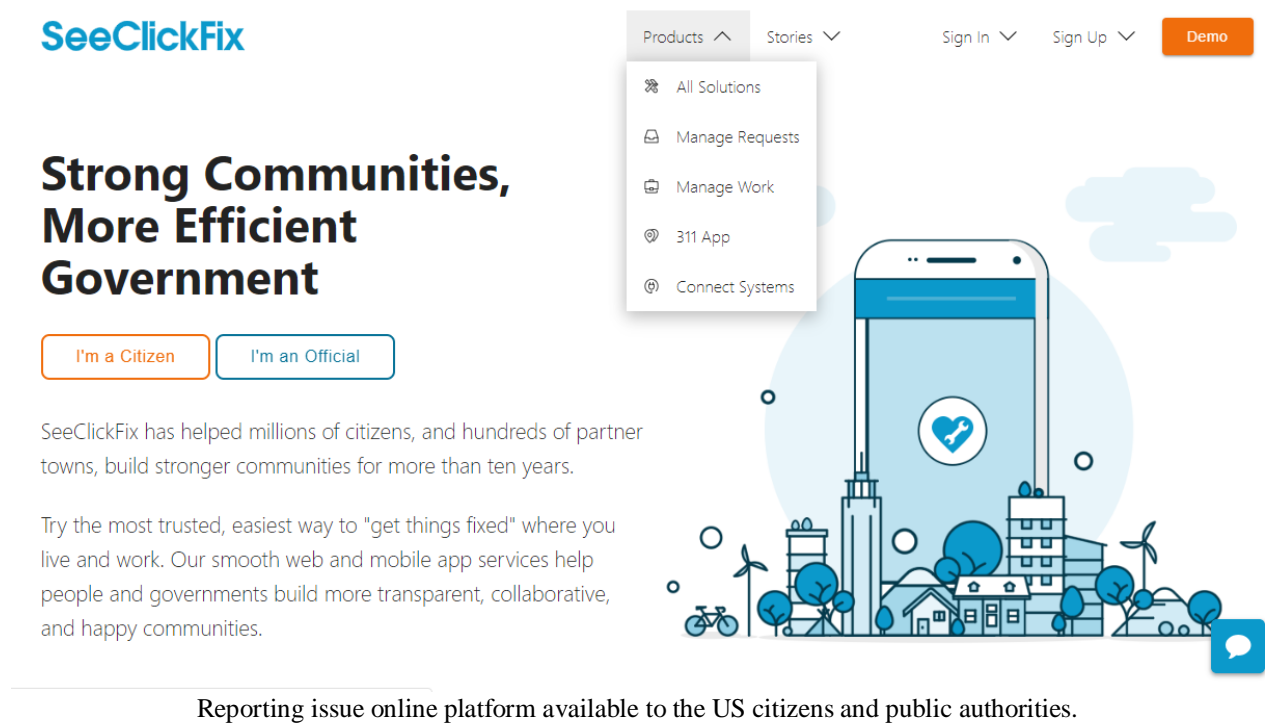
The Opportunity Builder extension inside the CityMart Platform (screenshot).

Figure 4. Public Stuff website.



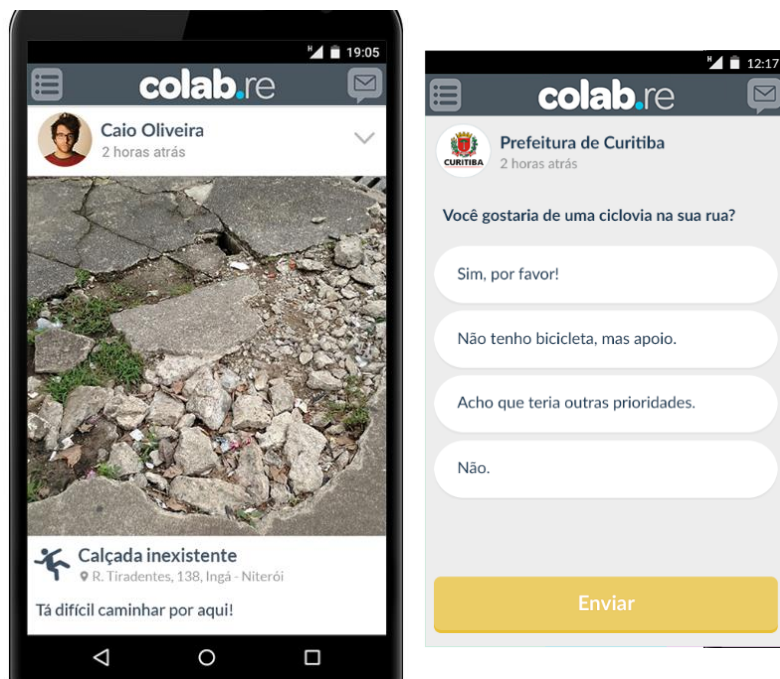
The Public Stuff platform available for governments and citizens in the US.

Figure 5. SeeClickFix website.



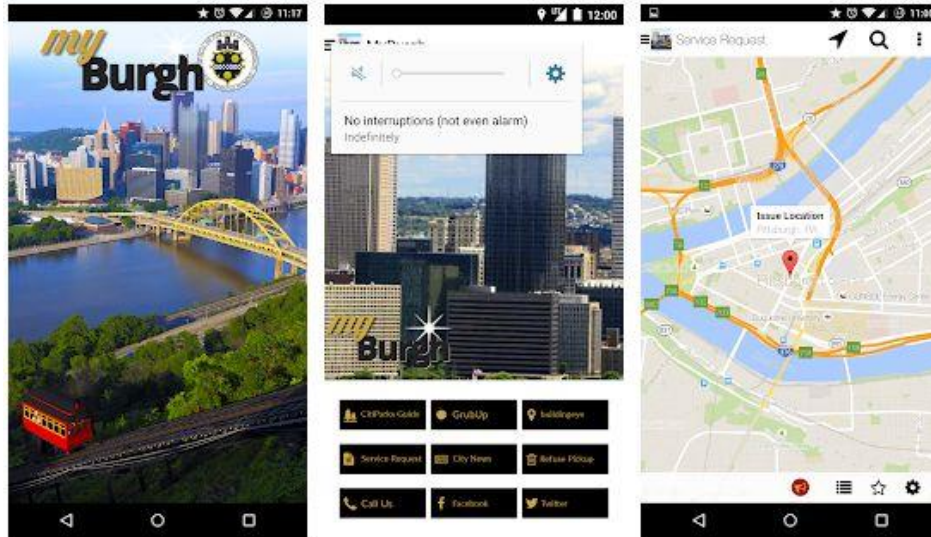
Reporting issue online platform available to the US citizens and public authorities.

Figure 6. Colab APP.



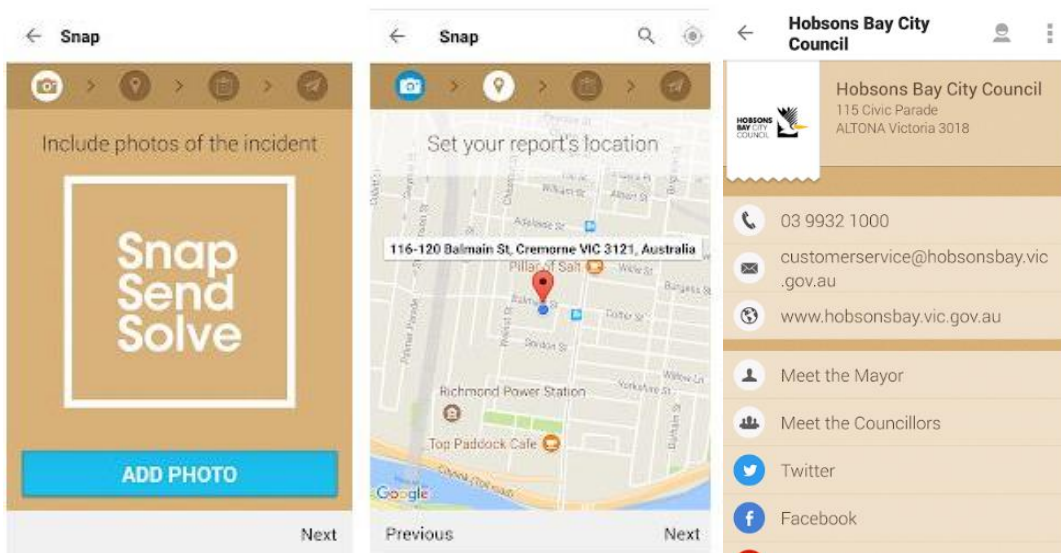
Colab simulation of the app features with reporting issues and polls.

Figure 7. MyBurgh App.



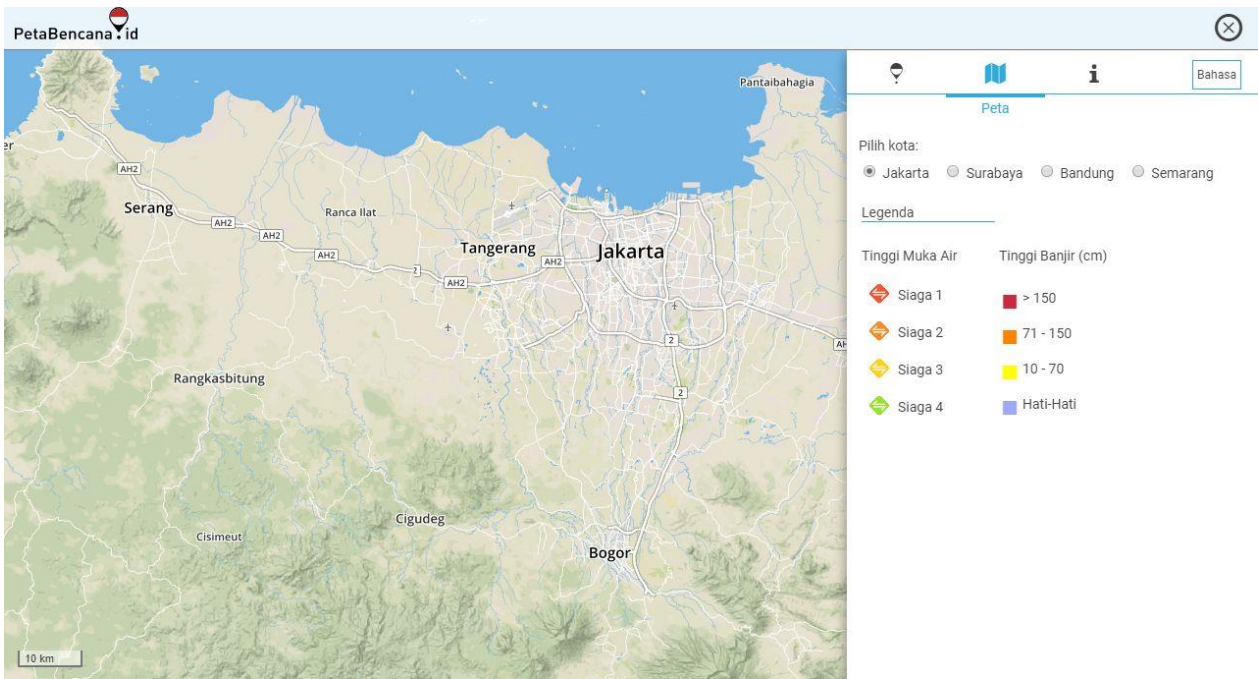
MyBurgh app features and app appearance.

Figure 8. Snap, Send Solve App.



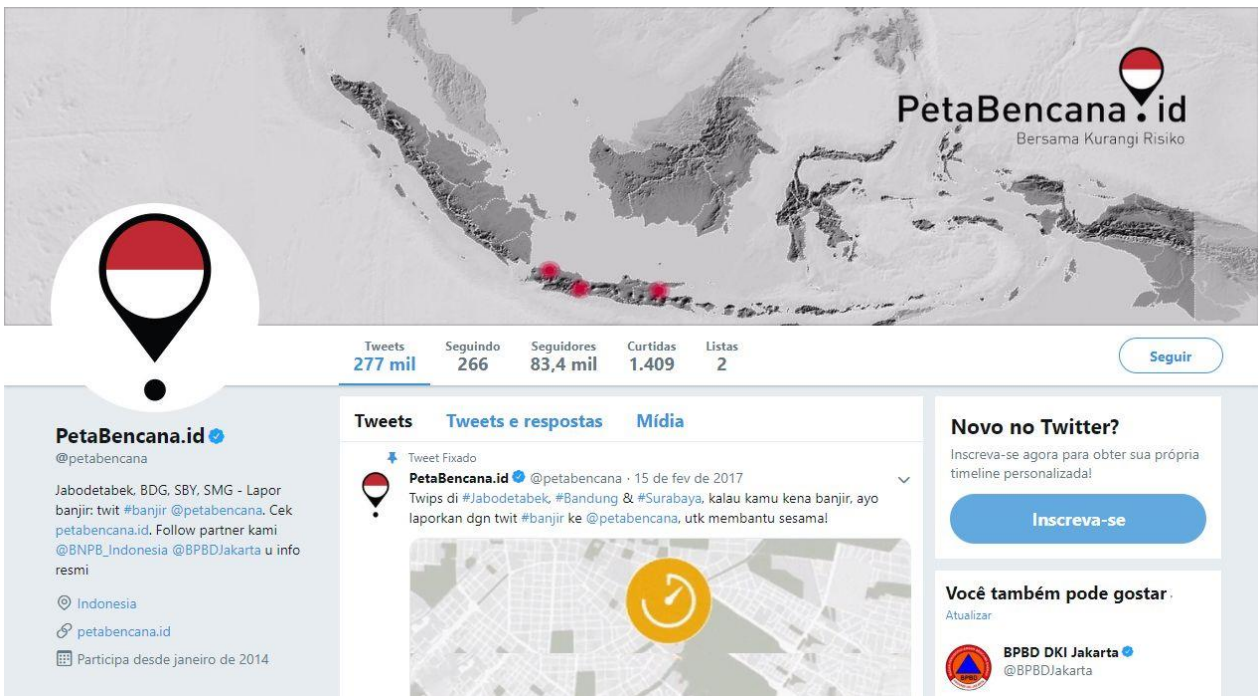
Snap Send Solve feature's screenshot.

Figure 9. *PetaBencana.id* platform.



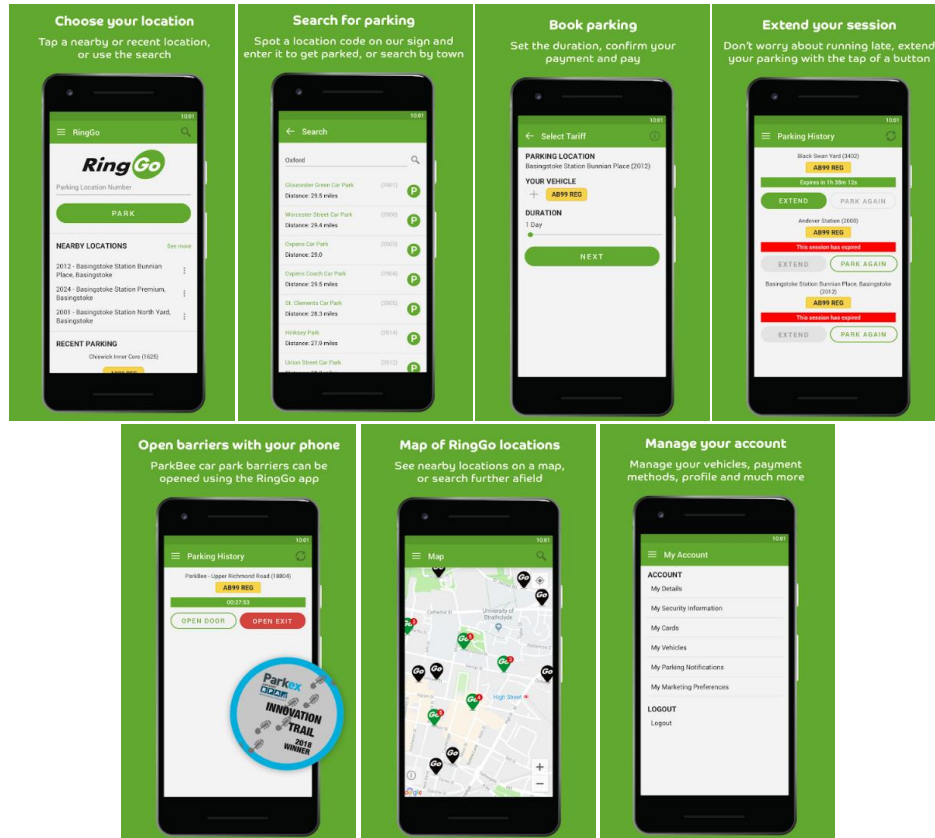
PetaBencana.id real-time digital platform and its features.

Figure 10. *PetaBencana.id* Twitter Data Grant.



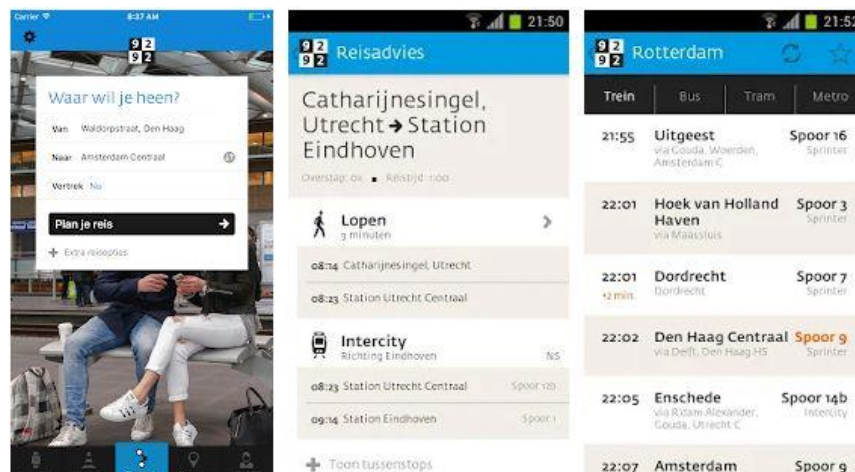
PetaBencana.id Twitter page (2018).

Figure 11. *RingGo Parking App (United Kingdom).*



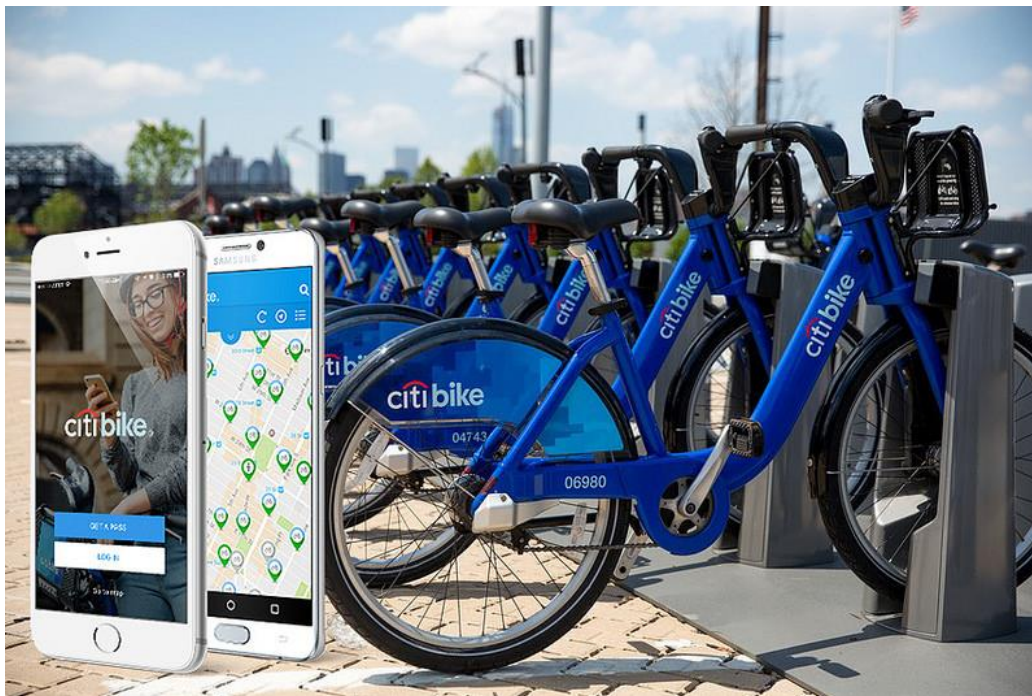
RingGo app features simulation.

Figure 12. *9292, the Netherlands's public transports app.*



Screenshot of the app's features and how it works to help to plan the best route with real-time status of the transports.

Figure 13. *Citibike in New York City.*



Citibike is a bike-share platform sponsored by Citibank.

Figure 14. *eCooltra Scooter-share app.*



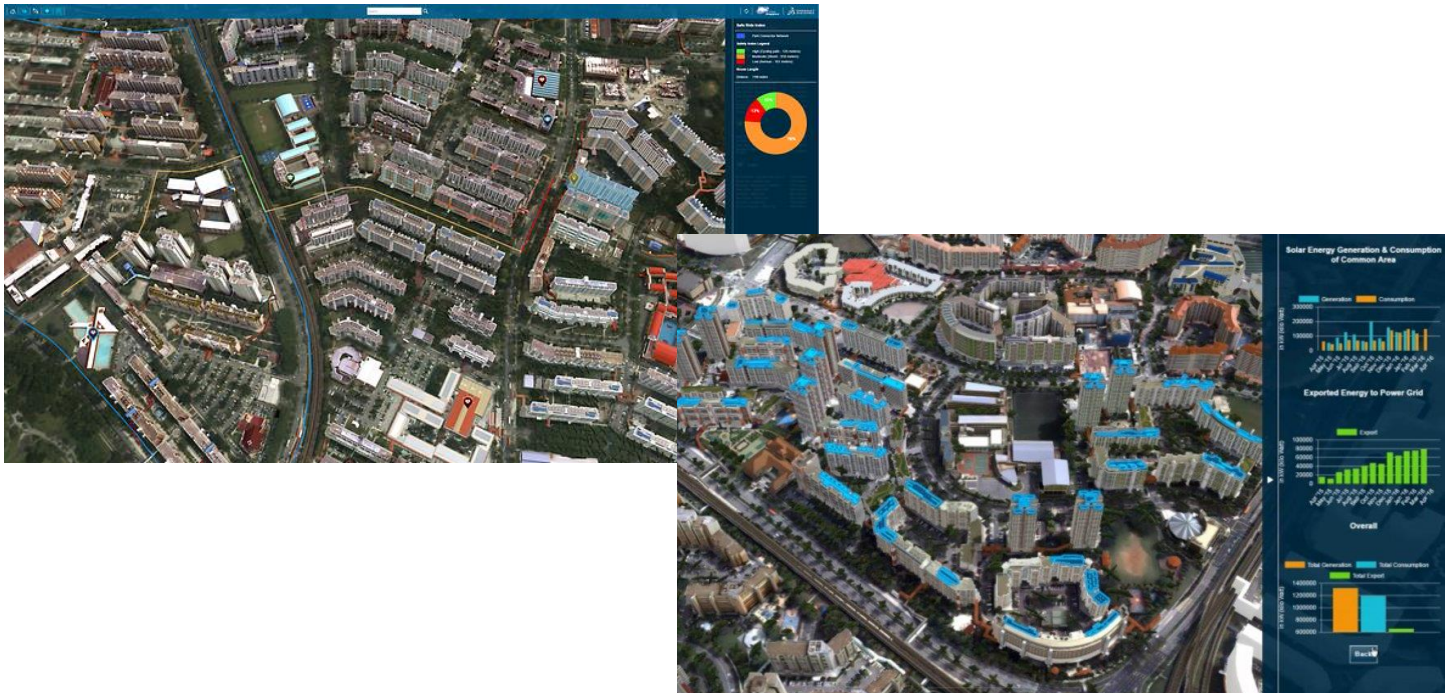
On the left, eCooltra web-banner advertising and on the right the app usability screenshot.

Figure 15. *Emov car-shared app.*



On the left, how Emov's app works and, on the right, how the cars look like.

Figure 16. *Virtual Singapore: City's 3D simulation.*



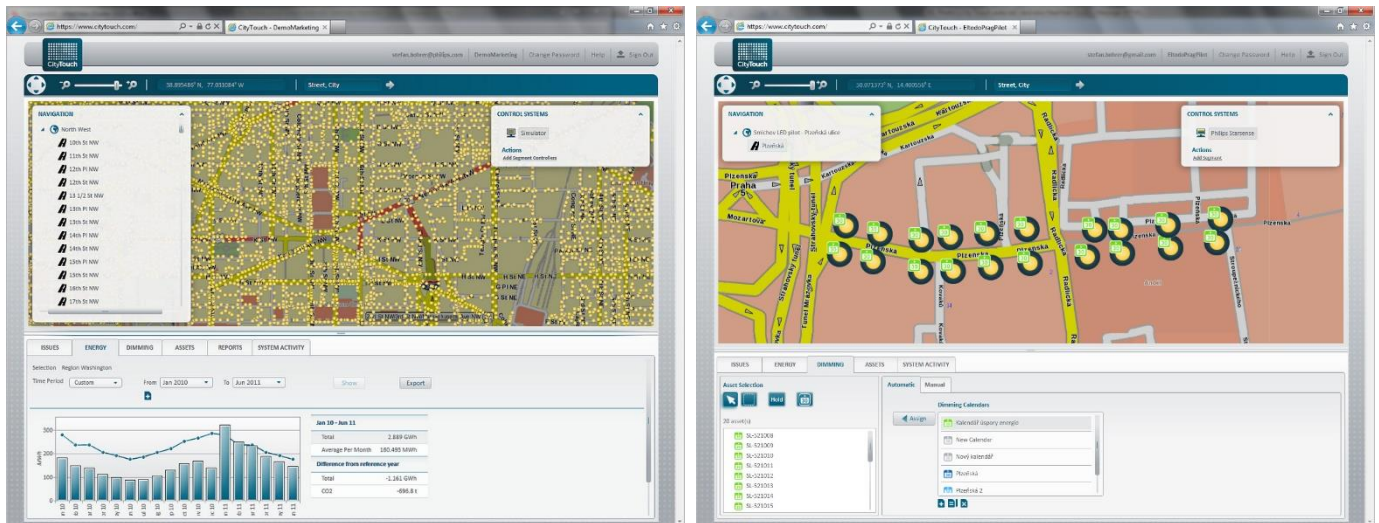
Screenshot of the dynamic 3D city model' project in development, running to be a collaborative data platform.

Figure 17. *The Planet Group project: The world's first Social Smart City.*



From the left top bottom to right: The Social Smart City Laguna project's mockup, the current projects construction, the firsts houses built in the Smart City and the city's entrance.

Figure 18. *The CityTouch software platform.*



Screenshot of how the software works, its features, the kind of data information available and its appearance.

References

- Aaronson, S. and Reeves, J. 2002a. *The European Response to Public Demands for Global Corporate Responsibility*. Washington, DC: National Policy Association.
- Adner, R. 2017. *Ecosystem as Structure: An Actionable Construct for Strategy*. Journal of Management 2017, Vol. 43 No. 1, 39–58.
doi: 10.1177/0149206316678451
- Albareda, L., Lozano, J.M. and Ysa, T. 2007. *Public policies on corporate social responsibility: the role of governments in Europe*. Journal of Business Ethics, 74:4, 391–407.
- Albareda, Lozano, Tencati, Midttun and Perrini. 2008. “The changing role of governments in corporate social responsibility: drivers and responses.” In *Business Ethics: A European Review, Volume 17, Number 4*. Journal compilation 2008: Blackwell Publishing Ltd.
- Benbeniste, S., Pueyo, R. and Llaría, J. 2004. “Responsabilidad social corporativa y políticas públicas” In *Informe 2004*. Zaragoza: Fundación Ecología y Desarrollo.
- Jean-Pascal Gond , Nahee Kang and Jeremy Moon. 2011. *The government of self-regulation: on the comparative dynamics of corporate social responsibility*. Economy and Society, 40:4, 640–671. Routledge: Routledge Informa Ltd.
- Joseph, E. 2003. *A New Business Agenda for Government*. London: Institute for Public Policy Research.
- Mendoza, X. 1996. *Las transformaciones del sector público en las sociedades avanzadas. Del estado del bienestar al estado relacional*. Papers de Formació, 23. Diputació de Barcelona.
- Midttun, A. 2005. *Policy making and the role of government. Realigning business, government and civil society. Emerging embedded relational governance beyond the (neo) liberal and welfare state models*. Corporate Governance: International Journal of Business in Society, 5:3, 159–174.
- Porter, M. and Kramer, M. 2011. *Creating Shared Value: How to reinvent capitalism—and unleash a wave of innovation and growth*. Harvard Business Review: Reprint R1101C.
- Steurer, R. 2010. *The role of governments in corporate social responsibility: characterising public policies on CSR in Europe*. Policy Sciences: Springer Science+Business Media, LLC.
- Tompson, T. 2017. *Understanding the Contextual Development of Smart City Initiatives: A Pragmatist Methodology*. Tongji University: Tongji University Press.
- Zadek, S. 2001. *Third Generation Corporate Citizenship*. London: The Foreign Policy Centre & Account-Ability.
- Nominet. 2018. “List of Smart City projects”. Accessed October 08. <https://www.nominet.uk/list-smart-city-projects/>

Smart Cities Info. 2018. “Project List”. Accessed October 08.
<http://www.smartcities.info/projects>

The Economist. 2018. Accessed October 08. <https://www.eiu.com/home.aspx>

Amsterdam Smart City. 2018. Accessed October 8. <https://amsterdamsmartcity.com/projects>

Computer Business Review. 2018. “Smart city projects to watch in 2018”. Accessed October 08.
<https://www.cbronline.com/internet-of-things/smart-cities/smart-city-projects/>

World Council on City Data (WCCD). 2018. Accessed October 10. <http://www.dataforcities.org/>

World Resources Institute Ross Center (WRI Ross Center). 2018. Accessed October 18.
<http://wrirosscities.org/>

New Cities Foundation. 2018. Accessed October 18. <http://newcities.org/>

Public Stuff website. 2018. Accessed October 18. <http://www.publicstuff.com/>

Citymart. 2018. Accessed November 03. <http://www.citymart.com/>

Colab app website. 2018. Accessed November 03. <https://www.colab.re/>

See Click Fix app website. 2018. Accessed November 04. <https://seeclickfix.com/>

Arup Company website. 2018. Accessed November 04. <https://www.arup.com/>

The Guardian: Global public leaders. 2017. “Seven successful government apps from around the world”. Accessed November 04. <https://www.theguardian.com/public-leaders-network/2017/jan/23/seven-successful-government-digital-service-apps-technology>

PetaBencana.id Online Platform. 2018. Accessed November 05. <https://petabencana.id/>

University of Wollongong: Global Challenges. 2018. “Harnessing social media to respond to natural disasters”. Accessed November 05.
<https://globalchallenges.uow.edu.au/impact/UOW219619.html>

My RingGo app website. 2018. Accessed November 05. <https://www.myringgo.com/apps>

Portugal Smart Cities Summit. 2018. Accessed November 18. <https://portugalsmartcities.fil.pt/>

Youtube. 2018. “Brasil ganha primeira smart city social do mundo – TecMundo”. Accessed November 18. <https://www.youtube.com/watch?v=dneYymnsM4M>

Smart City Expo World Congress. 2018. Accessed November 18.
<http://www.smartcityexpo.com/en/home>

Vertigo Technologia. 2016. “O que é Smart City?”. Accessed November 18.
<https://vertigo.com.br/o-que-e-smart-city/>

9292 app website. 2018. Accessed November 19. <https://9292.nl/>

Barcinno. 2018. “The Transformation That Barcelona Had Undergone To Become A Smart City”. Accessed November 20. <http://www.barcinno.com/barcelona-smart-city-technologies/>

Innovation is Everywhere. 2018. “Why is Singapore the smartest city in the world?”. Accessed November 20. <https://www.innovationiseverywhere.com/why-is-singapore-the-smartest-city-in-the-world/>

Drive Now Car Sharing app website. 2018. Accessed November 20. <https://www.drive-now.com/pt>

Emov app website. 2018. Accessed November 20. <https://www.emov.eco/>

eCooltra Scooter Sharing app website. 2018. Accessed November 20. <https://www.ecooltra.com/pt>

Urban Hub. 2018. “Smart City 3.0 – pergunte a Barcelona sobre a próxima geração de cidades inteligentes.”. Accessed November 20. <http://www.urban-hub.com/pt-br/cities/barcelona-deixa-a-cidade-ainda-mais-inteligente/>

Catalonia Trade & Investment. 2018. “The Smart City sector takes root in Catalonia”. Accessed November 20. <http://catalonia.com/trade-with-catalonia/smart-city.jsp>

Bee Smart City. 2018. “Smart City Portrait: Barcelona”. Accessed November 20. <https://hub.beesmart.city/city-portraits/smart-city-portrait-barcelona>

Modern Aging Singapore website. 2018. Accessed November 21. <https://modernaging.sg/>

Smart City Laguna website. 2018. Accessed November 21. <http://smartcitylaguna.com.br/>

Planet: The Smart City, The Planet group website. 2018. Accessed November 21. <https://www.planetsmartcity.com/pt-br/>

Lighting Philips: CityTouch. 2018. Accessed November 21. <http://www.lighting.philips.com/main/systems/lighting-systems/citytouch>

Lighting Philips Cases. 2018. “Floating Garden: greener with connected lighting”. Accessed November 21. <http://www.lighting.philips.com/main/cases/cases/road-and-street/szczecin-city>

Lighting Philips Cases. 2018. “Los Angeles is blazing the trail for connected street lighting”. Accessed November 21. <http://www.lighting.philips.com/main/cases/cases/road-and-street/los-angeles>

Lighting Philips Cases. 2018. “Better light and 47% energy savings”. Accessed November 21. <http://www.lighting.philips.com/main/cases/cases/road-and-street/nacka>

Lighting Philips: Systems. 2018. “Creating efficient and livable cities”. Accessed November 21. <http://www.lighting.philips.com/main/systems/system-areas/roads-and-streets>

Agorize. 2018. “Smart Cities Challenge by Philips Lighting”. Accessed November 21. <https://www.agorize.com/en/challenges/philips-challenge>

Lighting Philips: Inspiration. 2018. “Smart cities are preparing for the future”. Accessed November 21. <http://www.lighting.philips.com/main/inspiration/smart-cities/smart-city-trends/openness>

UN-Habitat. 2018. “UN-Habitat at a glance”. Accessed November 25. <https://unhabitat.org/un-habitat-at-a-glance/>

Sustainable Development Goals: Knowledge Platform. 2018. Accessed November 25. <https://sustainabledevelopment.un.org/#>

World Urban Campaign. 2018. Accessed November 28. <http://worldurbancampaign.org/>

The Guardian: Tech and City. 2014. “The truth about smart cities: ‘In the end, they will destroy democracy’”. Accessed December 11. <https://www.theguardian.com/cities/2014/dec/17/truth-smart-city-destroy-democracy-urban-thinkers-buzzphrase>

(Steven Poole, The Guardian, 2014)

Scientific American: Observations. 2017. “The Inconvenient Truth about Smart Cities”. Accessed December 11. <https://blogs.scientificamerican.com/observations/the-inconvenient-truth-about-smart-cities/>

(Smith, Kendra L., Scientific American, 2017)

Science Direct: Urban Transport. 2017. “Barriers to Automobile Change”. Accessed December 11. <https://www.sciencedirect.com/topics/social-sciences/urban-transport>

University of Liverpool: News. 2018. “Why smart city agenda is failing to live up to hype” (Prof. Rob Kitchin). Accessed December 11. <https://news.liverpool.ac.uk/2018/04/27/why-smart-city-agenda-has-failed-to-live-up-to-hype/>

Responsive Transport: Encircle. 2016. Accessed December 12. http://responsivetransport.org/wp/?page_id=39

New York Times: Middle East. 2008. “Israel Is Set to Promote the Use of Electric Cars”. Accessed December 13. <https://www.nytimes.com/2008/01/21/world/middleeast/21israel.html>

NSW Government. 2016. “Popular global commuter apps now live in Sydney”. Accessed December 13. <https://www.transport.nsw.gov.au/news-and-events/media-releases/popular-global-commuter-apps-now-live-sydney>

The Sydney Morning Herald. 2009. “How RailCorp's derailing commuter 'apps’”. Accessed December 13. <https://www.smh.com.au/technology/how-railcorps-derailing-commuter-apps-20090306-gdtejs.html>

Enghouse Interactive Case Study. 2018. “RingGo Parking: CTT Slash Time To Market for Automated Parking Services”. Accessed December 14. <http://info.enghouseinteractive.com/rs/547-FBA-390/images/Ringo%20Case%20Study.pdf>

Eltis: The urban mobility observatory. 2014. “RingGo pay-by-phone parking for rail users. UK”. Accessed December 14. <http://www.eltis.org/discover/case-studies/ringgo-pay-phone-parking-rail-users-uk>

PetaBencana.id Case Study. 2017. “Embracing innovation in government: global trends”. Accessed December 14. <https://www.oecd.org/gov/innovative-government/embracing-innovation-in-government-indonesia.pdf>

The Jewish News of Northern California. 2017. “At upcoming Oakland book talk, the epic fail of an Israeli electric car startup”. Accessed December 14. <https://www.jweekly.com/2017/11/30/upcoming-oakland-book-talk-epic-fail-israeli-electric-car-startup/>

Clean Technica. 2014. “Shai Agassi & Project Better Place’s Downfall”. Accessed December 14. <https://cleantechnica.com/2014/05/01/shai-agassi-project-better-place/>